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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,169	04/20/2007	Toshiaki Tagawa	701018	1668

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EXAMINER	
HUFF, SHEELA JITENDRA	
ART UNIT	PAPER NUMBER
1643	
MAIL DATE	DELIVERY MODE
03/06/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,169	TAGAWA ET AL.	
	Examiner	Art Unit	
	Sheela J. Huff	1643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/30/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The IDS filed 5/30/06 has been considered and an initialed copy of the PTO-1449 is enclosed.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. In claim 1 it is not clear if the terminology "which has a particle size of 300nm or less and contains a triglycerol" is referring to the internal cavity or the liposome.

b. In claim 12,it is not clear if the ligand and/or polymer are inside the liposome or on the outside.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7, 11-16 and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Modi US 6193997.

This reference discloses mixed liposome pharmaceutical formulations comprising a protenic pharmaceutical agent, water, at least one membrane-mimetic amphiphile and at least one phospholipid wherein the phospholipid can be phospholipid GLA (glycolic, lactic acid) and/or triolein (reads on applicant's triglycerol) (see col. 3, lines 30-65). The protenic pharmaceutical agent can be monoclonal and polyclonal antibodies (reads on ligands of claims 12-15), chemotherapeutic agents and other non proteinaceous compounds such as anitsense oligos and RNA (see col. 5, lines 5-20). The size of liposomes are less than 10nm (col. 6, lines 42-44).

The terminology in claim 21 "for diagnosis and/or therapeutic treatment of cancer" is intended use and carries no patentable weight when evaluating a compound claim.

While the reference is silent as to the encapsulation rate of the compound in the internal cavity, it is inherent that the encapsulation rate of the reference is the same as that of the claimed invention. Since the Patent and Trademark Office does not have the facilities for examining and comparing the claimed encapsulation rate with that of the reference, the burden of proof is upon the Applicants to show a distinction between the rates. See In re Best, 562 F.2d 1252, 195 U.S.P.Q. 430 (CCPA 197) and Ex parte Gray, 10 USPQ 2d 1922 1923 (PTO Bd. Pat. App. & Int.).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7, 9-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Modi US 6193997 in view of Slater et al US 2003/0133973.

Modi has been discussed above.

This reference does not disclose the internal cavity comprising a compound and a polysaccharide, the compounds of claims 9-10, 17 and 18 or the ligand and/or polymer binding to the external surface of the liposome.

Slater et al disclose liposomes which have hydrophilic polymer chains on the outside of liposomes and the polymer can be polyethylene glycol (0064-0067). The reference also discloses agents (inlcuedes compounds of MW 400-2,000,000 daltons and polyanionc polymers entrapped in the liposomes and these include sulfate polysaccharies, hyaluronic acid, chrondotin sulfate, celluloses and cellulose derivatives (0093-0094).

In view of the disclosure of Slater et al which shows that liposomes can also comprise polyethylene glycol, sulfate polysaccharies, hyaluronic acid, chrondotin sulfate, celluloses and cellulose derivatives it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use those compounds in the formation of a liposome. The terminology in claim 21 "for diagnosis and/or therapeutic treatment of cancer" is intended use and carries no patentable weight when evaluating a compound claim.

Claims 1-5, 7-8 and 11-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Modi US 6193997 in view of EP 1170018 and applicant's admission on page 6 of the specification.

Modi has been discussed above.

This reference does not disclose the compounds of claims 8, 17 and 18 or the ligand and/or polymer binding to the external surface of the liposome.

The EP reference discloses ligand bonded complexes wherein the ligand (such as an antibody directed against a tumor) is bonded thru a water-soluble macromolecule

such as polyethylene glycol, polyglycolic acid, polylactic acid, polyvinylpyrrolidone and/or polyalkylene glycol to a liposome wherein the liposome encapsulates an active medicament (col. 2, lines 20-58 and col. 5, lines 25-38). The size of liposomes are about 20-500nm (col. 6, line 10). A variety of different drugs can be encapsulated into the liposome and they include cisplatin and a variety of other anti-tumor agents.

On page 6 of the specification applicant admits that cisplatin, carboplatin, nedaplatin, gemcitabine and Ara-C are anti-tumor agents.

In view of Modi which dislcoses the incorporation of chemotherapetuic agents into the liposomes, and since both applicant and the EP reference disclose cisplatin as such an agent and since applicant admits that cisplatin, carboplatin, nedaplatin, gemcitabine and Ara-C are anti-tumor agents, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporation any of the known anti-tumor agents into the liposomes of Modi with the expected benefit of treating cancer. Furthermore, in view of the EP reference it also would have been obvious to attach the antibody to the outside of the liposome thru a polyethylene glycol with the added benefit of specifically targeting the tumor.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim1-10, 12 of copending Application No. 11/812804. Although the conflicting claims are not identical, they are not patentably distinct from each other because the only difference between the two claims sets is the scope. Specifically, the claims in the 804 application do not require the medicament to be encapsulated, but as disclosed on page 7 of the specification it can be.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-21 are directed to an invention not patentably distinct from claim1 1-10 and 12 of commonly assigned 11/812804. The reasons for this have been discussed above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned 11/812804, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly

assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela J. Huff whose telephone number is 571-272-0834. The examiner can normally be reached on Monday-Thursday 6am to 2pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Helms can be reached on 571-272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sheela J Huff/
Primary Examiner
Art Unit 1643

sjh